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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,940	11/19/2003	Shinichi Nakamura	9319H-000603	6790
27572	7590	09/15/2005	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			HSIEH, SHIH WEN	
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BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	

2861

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/716,940	Applicant(s) NAKAMURA, SHINICHI	
	Examiner Shih-wen Hsieh	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7,13,14 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 2,5,8-12 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-19-03; 8-17-05</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Objections***

2. Claims 9 and 16 are objected to because of the following informalities:

In regard to:

Claim 9:

Line 2, please change "the supply passage" into "a supply passage" to correct a minor lack of antecedent basis problem.

Claim 16:

Line 6, please change "the workpiece" into "a workpiece" to correct a minor lack of antecedent basis problem.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 6, 13, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (JP 404070351A).

In regard to:

Claim 1:

Sato et al. teach:

A method of filling a flow passage inside a liquid droplet ejection head (1, fig. 2) with a function liquid (C, Y, M and B, fig. 2), comprising the steps of:

sending under pressure the function liquid for filling into the low passage inside the liquid droplet ejection head, refer to page 14, lines 4 to 19; and

thereafter sucking the function liquid out of a nozzle of the liquid droplet ejection head, refer to page 14, lines 20-24.

Claim 3:

Sato et al. further teach:

wherein the step of sucking is performed in a state in which a suction cap (4, fig. 2) is closely adhered to the liquid droplet ejection head, and wherein the step of sending the function liquid under pressure is performed in a state in which the function liquid to be discharged from the nozzle is capable of being received by the cap, refer to page 14, lines 4-24.

Claim 6:

Sato et al. teach:

An apparatus for filling a flow passage inside a liquid droplet ejection head (1, fig. 2) with a function liquid (C, M, Y and B, fig. 2) inside a function liquid storing part (2, fig. 2, Sato et al. called it an buffer tank), comprising:

pressurized liquid sending means (28, fig. 2, Sato et al. called it a compressive pump) for sending under pressure the function liquid, by pressurizing the function liquid storing part, to thereby fill the flow passage inside the liquid droplet ejection head with the function liquid inside the function liquid storing part, refer to page 14, line 4-19;

sucking means (4, the cap pluses 7, the suction pump, fig. 2) for sucking the function liquid out of a nozzle (1a, fig. 2) of the liquid droplet ejection head through a cap (4, fig. 2) which is in close contact with the liquid droplet ejection head, refer to page 14, lines 4-24;

control means (27 and 6, Sato et al. called them motors, fig. 2) for controlling the pressurized liquid sending means and the sucking means, refer to page 14, lines 4-9, also please refer to page 12, lines 11-25 and page 14, line 25 to page 15, line 13 for the details control of the compressive pump (28);

wherein the control means drives the pressurized liquid sending means to thereby fill the flow passage inside a liquid droplet ejection head and thereafter drives the sucking means to thereby suck the function liquid from the liquid droplet ejection head, refer to page 14, line 4-24.

Claim 13:

Sato et al. further teach:

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wherein the cap also serves as a receptacle to receive the function liquid to be discharged from the nozzle of the liquid droplet ejection head as a result of driving of the pressurized liquid sending means, refer to page 14, lines 4-24. Note: ink discharged from ink jet head into the cap (4) first, and then to the effluent tank (8). Therefore, cap (4) is functioned as a receptacle to receive discharged ink first.

Claim 16:

Sato et al. further teach:

A liquid droplet ejection apparatus comprising:

a function liquid filling apparatus ( 2 and 3) for the liquid droplet ejection head (1) as set forth in claim 6; and

a liquid droplet ejection head (1) for ejecting the function liquid from the nozzle by performing scanning relative to the workpiece (14, fig. 1).

Claim 17:

Sato et al. further teach:

wherein the function liquid filling apparatus for the liquid droplet ejection head further comprises a main tank (3, fig. 2) which stores the function liquid to be supplied to the function liquid storing part (2, fig. 2) and which causes the function liquid storing part to serve as a sub-tank (Sato et al. called it as a buffer tank), and wherein the pressurized liquid sending means also serves a function of supply means for supplying the function liquid from the main tank (3) to the function liquid storing part (2), refer to page 14, lines 11-19.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Kiguchi et al. (US Pat. No. 6,830,855 B2)

The applied reference has a common assignee (Seiko) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Kiguchi et al. teach:

A method of manufacturing an electrooptic device comprising the step of forming on a substrate a film forming part by ejecting the function liquid from the function liquid droplet ejection by using the liquid droplet ejection apparatus, refer at least col. 1, lines 8-16.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 7, 14, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al.

In regard to:

Claim 4:

Sato et al. teach every thing in this claim, except the underlined portion in this claim:

The method according to claim 1, wherein the step of sucking the function liquid is performed in a state in which the suction cap is kept adhered to the liquid droplet ejection head and, at a final stage, the suction cap is departed while continuing the sucking operation.

When suction cap is departed from the head while continuing the suction operation is known in the art as an "idle suction", refer to MPEP 2144.03, In re Malcolm, 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the device of Sato et al. to include the continuing sucking operation after the departure of the cap away from the head as most



prior art reference did for the purpose of delivering ink received in the cap to a container such as waste ink tank, and in Sato et al.'s case, the effluent tank (8).

Claim 7:

The device of Sato et al. DIFFERS from claim 7 in that it does not teach:

wherein the control means starts the driving of the suction means after the driving of the pressurized liquid sending means is stopped.

Sato et al. teach the compressive pump, which corresponds to the pressurized liquid sending means in this claim. Sato et al. also teach the suction pump (7), which corresponds to the suction means in this claim. Sato et al. further teach starting the compressive pump, and at the same time starting the suction pump (see Sato et al.'s page 14, lines 9-10). That portion is different from the limitation of this claim.

Please be advised that an apparatus claim must be structurally distinguishable from the prior art, or, an apparatus must be distinguished from the prior art in term of structure rather than function, refer to MPEP 2144, In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). And the manner of operating the device does not differentiate apparatus claim from the prior art. Therefore, so long as the two pumps taught by Sato et al. function the same as those in the instant application, whether they operate at the same time or one starts after another stops do not carry patentable weight per discussion above.

Claim 14:

The apparatus according to claim 13, wherein the suction means comprises an access-and-departure mechanism for relatively moving the cap toward and away from,

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the liquid droplet ejection head, and wherein at a last stage the control means moves, by the access-and departure mechanism, the cap away from the liquid droplet ejection head by the driving of the suction means while continuing the driving of the suction means.

Rejection:

"Access-and-departure mechanism for relatively moving the cap toward and away from, the liquid droplet ejection head" is obviously contained in Sato et al.'s invention, although not explicitly expressed.

The other portion of the claim is rejected on the basis as set forth for claim 4 discussed above.

Claim 18:

An electrooptic device comprising a film forming part which is formed on a substrate by the function liquid ejected from the liquid droplet ejection head by using the liquid droplet ejection apparatus as set forth in claim 16.

Rejection:

Sato et al. teach discharging ink from the liquid droplet ejection head by using the liquid droplet ejection apparatus as set forth in claim 16. Please refer to the rejections set forth for claims 6 and 16 discussed above.

"An electrooptic device comprising a film forming part which is formed on a substrate by the function liquid ejected from the liquid droplet ejection head by using the liquid droplet ejection apparatus as set forth in claim 16" is the intended use of liquid droplet ejection apparatus as set forth in claim 16. A recitation of the intended use of the

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claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim 20:

An electronic apparatus comprising the electrooptic device as set forth in claim 18.

Rejection:

This claim is rejected on the basis as set forth for claim 18 discussed above.

### ***Allowable Subject Matter***

9. Claims 2, 5, 8-12 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

In regard to:

Claim 2:

The primary reason for the allowance of claim 2 is the inclusion of the method step of wherein a flow velocity of the function liquid at each part at the step of sending

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the function liquid under pressure is lower than a flow velocity of the function liquid at each part at the step of sucking the function liquid. It is this step found in this claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claim 5:

The primary reason for the allowance of claim 5 is the inclusion of the step of after the step of sucking the function liquid, temporarily sending under pressure the function liquid to the liquid droplet ejection head. It is this step found in this claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claim 8:

The primary reason for the allowance of claim 8 is the inclusion of the limitation of a pressurizing-side gate valve which is interposed in the pressurizing pipe and which is controlled to be opened and closed by the control means; wherein driving and stopping of the pressurized liquid sending means are made by opening and closing of the pressurizing-side gate valve. It is this limitation found in this claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 9-11:

The primary reason for the allowance of claims 9-11 is the inclusion of the limitation of a gate valve which is interposed in the supply passage and which is opened and closed by the control means, wherein the control means closes the gate valve

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before start of driving of the suction means, starts driving of the suction means after closing the gate valve, and opens the gate valve while the suction means is being driven. It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

Claim 12:

The primary reason for the allowance of claim 12 is the inclusion of the limitation of wherein the control means controls the pressurized liquid sending means and the suction means such that a flow velocity of the function liquid by the pressurized liquid sending means becomes smaller than a flow velocity of the function liquid by the suction means. It is this limitation found in this claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claim 15:

The primary reason for the allowance of claim 15 is the inclusion of the limitation of wherein the control means temporarily drives the pressurized liquid sending means after the driving of the suction means has been stopped. It is this limitation found in this claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

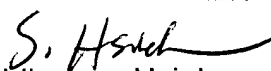
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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

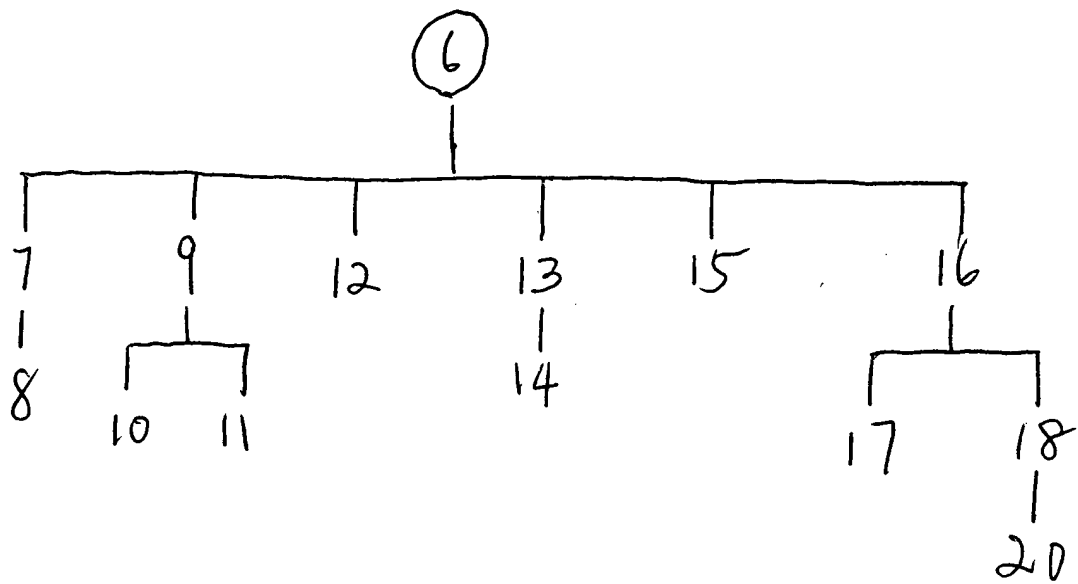
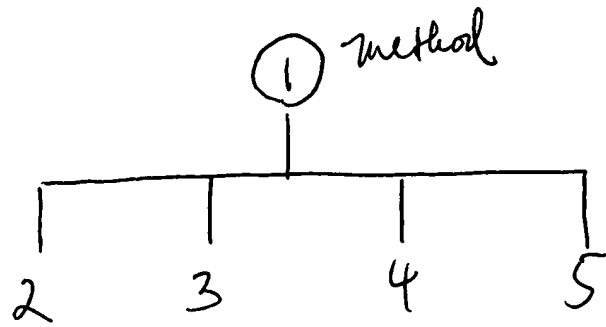
**SHIH-WEN HSIEH**  
**PRIMARY EXAMINER**

  
Shih-wen Hsieh  
Primary Examiner  
Art Unit 2861

SWH

Sept. 13, 2005

10/ 716,940



①⑨ method